for each of one or more locations represented by the image, a plurality of electrical signals, each representative of the intensity of a wavelength component of the reflected or transmitted light at the location;

a translation mechanism to relatively translate the sample relative to the light source; and

a computer configured to control the translation mechanism to relatively translate the sample relative to the light source so that said one-spatial-dimension imaging spectrometer produces a plurality of one-spatial-dimension spectral images, and the computer is further configured to derive a measurement of at least one property of at least one film of said sample from spectral information obtained from said plurality of one-spatial dimension spectral images.

2. (Once Amended) The apparatus of claim 1 in which the translation mechanism moves the sample relative to the light source.

3. (Once Amended) The apparatus of claim 1 wherein the computer is configured to form a two-spatial-dimensional image from the plurality of one-spatial-dimensional images, analyze the two-dimensional image to find one or more predetermined measurement locations, and measure one or more film properties from spectral information obtained at the one or more predetermined locations.

6. (Once Amended) A film measurement apparatus comprising:

a light source configured to generate a light signal;

a one-spatial-dimension imaging spectrometer configured to receive light from said light source that has been reflected or transmitted by a sample, and derive therefrom a one-spatial-dimension spectral image comprising, for each of one or more locations represented by the image, a plurality of signals, each signal representative of the intensity of a wavelength component of the reflected or transmitted light at the location; and

a computer configured to receive from said one-spatial-dimension imaging spectrometer a plurality of one-spatial-dimension spectral images representative of a region of a sample, and derive, from spectral information obtained from the plurality of one-spatial-dimension spectral images, a measurement of one or more properties of at least one film of said sample.

11. (Once Amended) The apparatus of claim 10 wherein at least one wavelength component of said two-spatial-dimension spectral image is analyzed to find one or more pre-determined

measurement locations, and measurements of one or more film properties are derived from spectral information obtained at the one or more pre-determined measurement locations.

18. (Once Amended) A method of measuring one or more properties of at least one film of a sample by:

forming a plurality of one-spatial-dimension spectral images, representative of a region of the sample, from light reflected off of or transmitted through the sample, each image comprising, for each of one or more locations represented by the image, a plurality of signals, each representative of a wavelength component of the reflected or transmitted light at the location; and

analyzing spectral data obtained from the plurality of one-spatial-dimension spectral images to determine measurements of one or more properties of the film.

21. (Once Amended) The method of claim 20 further comprising determining one or more measurement locations from the two-spatial-dimension spectral image of the sample, and deriving a measurement of one or more properties of one or more films of the sample from spectral information obtained from one or more of the measurement locations.

25. (Once Amended) A film measurement system comprising:

a light source configured to generate a light signal;

a one-spatial-dimension imaging spectrometer configured to receive light from said light source that has been reflected or transmitted by a sample, and derive therefrom a one-spatial-dimension spectral image comprising, for each of one or more locations represented by the image, a plurality of signals, each signal representative of the intensity of a wavelength component of the reflected or transmitted light at the location; and

a computer configured to receive from said one-spatial-dimension imaging spectrometer a plurality of one-spatial-dimension spectral images representative of a region of the sample, and derive, from spectral data obtained from the plurality of images, a measurement of one or more properties of at least one film of said sample.

26. (Once Amended) The system of claim 25 further comprising a translation mechanism which is used to move the sample relative to the light source to obtain a series of one-spatial-dimension spectral images of a region of the sample.

27. (Once Amended) The system of claim 25 further comprising a translation mechanism which is used to move the light source relative to the sample to obtain a series of one-spatial-dimension spectral images of a region of the sample.

30. (Once Amended) The system of claim 29 where at least one wavelength component of said two-spatial-dimension spectral image is analyzed to find one or more pre-determined measurement locations, and measurements of one or more film properties are derived from spectral information obtained at the one or more pre-determined measurement locations.

Kindly add the following new claims 37-47.

37. (New) The apparatus of claims 1 or 6 wherein said one-spatial-dimension spectral image is a line image.

38. (New) The method of claim 18 wherein said one-spatial-dimension spectral image is a line image.

39. (New) The system of claim 25 wherein the one-spatial-dimension spectral image is a line image.

40. (New) A system for measuring one or more properties of one or more films of a sample comprising:

means for generating light;

means for directing the light to the sample;

means for receiving light reflected from or transmitted through the sample, and deriving therefrom a one-spatial-dimension spectral image comprising, for each of one or more locations representing by the image, a plurality of signals, each representative of a wavelength component of the reflected or transmitted light at the location;

means for relatively translating the generating means and the sample; and

means for deriving a measurement of one or more properties of one or more films of said sample from spectral information obtained from a plurality of one-spatial-dimension spectral images of said sample.

41. (New) A method of measuring one or more properties of one or more films of a sample comprising:

a step for generating light from a generating means;

a step for directing the light to the sample;

a step for deriving, from light reflected from or transmitted through the sample, a plurality of one-spatial-dimension spectral images, each comprising, for each of one or more locations represented by the image, a plurality of signals, each representative of a wavelength component of the received or transmitted light at the location; and

a step for deriving, from spectral information obtained from the plurality of images, a measurement of one or more properties of one or more films of said sample.

42. (New) A system for measuring one or more properties of one or more films of a sample comprising:

a light source for generating light;

one or more optical elements for directing the light to the sample;

a one-spatial-dimension spectrometer for receiving light reflected from or transmitted through the sample, and deriving therefrom a one-spatial-dimension spectral image comprising, for each of one or more locations represented by the image, a plurality of signals, each representative of a wavelength component of the reflected or transmitted light at the location;

a translation mechanism for relatively translating the light source and the sample; and

a processor for controlling the translation mechanism to relatively translate the light source and the sample, so that the spectrometer produces a plurality of one-spatial-dimension spectral images, and the processor derives one or more measurements of one or more properties of one or more films of the sample from spectral information obtained from the plurality of one-spatial-dimension spectral images.

43. (New) A method of measuring one or more properties of one or more films of a sample comprising:

generating light from a light source;

directing the light to the sample;

deriving, from light reflected from or transmitted through the sample, a plurality of one-spatial-dimension spectral images, each comprising, for each of one or more locations represented by the image, a plurality of signals, each representative of a wavelength components of the reflected or transmitted light at the location; and

deriving one or more measurements of one or more properties of the one or more films from spectral information obtained from the plurality of images.